

NOTES ON A LITTLE KNOWN PUBLICATION BY SONDER ON THE MARINE ALGAE OF THE NEW HEBRIDES*

by

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INTRODUCTION

While involved in preparing a bibliography of Ferdinand J. H. Mueller (Churchill, Muir & Sinkora, 1978) I located a paper by O. W. Sonder (1881) on a collection of marine algae from the New Hebrides. Four new species were described in the publication, which appears to have escaped the notice of subsequent monographers.

F. A. Campbell of Geelong, Victoria, who visited the New Hebrides from May 1872 to February 1873, collected plants on the islands at the suggestion of Mueller. When Campbell (1873) published his account of the journey, a paper on the vascular plants, prepared by Mueller, was included as an appendix. The algal collections were sent for study to O.W. Sonder in Hamburg, Germany. A manuscript drafted by Sonder was later submitted by Mueller to the Royal Society of Tasmania, of which Sonder was an honorary member. The paper was read at the Society's meeting on 13 April 1880, and subsequently published in their journal. Sonder's death on 21 November 1881, and the subsequent purchase by the Victorian Government of his herbarium and its removal to Melbourne would explain why the publication remained virtually unknown.

Sonder listed 23 species, of which four were described as new. Most of the relevant specimens, including the type material of the new species with Sonder's draft diagnoses, have been located in the National Herbarium of Victoria (MEL).

TYPIFICATION OF SONDER'S NEW SPECIES

The type sheets of the four new species are as follows:

Sarcodia polyclada Sonder (1881:13).

Holotype: MEL 516217.

The collection consists of a single specimen, which is sterile as stated by Sonder.

Caulerpa novo-ebudarum Sonder et F. Mueller in Sonder (1881:14).

Caulerpa vitiensis Sonder in herb.

Lectotype (here chosen): MEL 531063. Isolectotype: MEL 531064.

?Isolectotype: MEL 568235.

The material of this taxon located in MEL consists of five specimen sheets from the Sonder herbarium, of which three are annotated in Sonder's hand as "*Caulerpa vitiensis* Sond.". Two of these three sheets (MEL 531063 and MEL 531064) are, in addition, annotated by Sonder with the locality and collector "New Hebrides. F. Campbell", while the third (MEL 531062) has Sonder's annotation of "Viti Archipelagus, Pacific Ocean". The remaining two specimen sheets have no Sonder annotations and are mounted together on MEL 568235 with a cross-reference to the three annotated sheets.

*The name of the New Hebrides was changed to Vanuatu with the gaining of independence on 30 July 1980.

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Muelleria 4(4): 419-422 (1981).

In the published description of the species (Sonder, 1881) no collections were specifically mentioned, but as the whole article applies to material gathered by Campbell in the New Hebrides both MEL 531063 and MEL 531064 are therefore type collections. However in Sonder's handwritten draft diagnosis (now mounted with the lectotype) he states "New Hebrides. F. Campbell. (Ins. Fidschi)". This statement could mean that Sonder mistakenly believed the New Hebrides to be part of the Fiji Islands. Alternatively, it could indicate that he was basing his diagnosis on New Hebrides material collected by Campbell but knew of, or had also seen, similar material from Fiji. The latter interpretation seems more likely as it is consistent with his method of citing collections in other papers (Sonder, 1871) and also with his locality annotations on the specimen sheets. MEL 531062 should therefore be regarded as further material examined although not cited by Sonder, but should not be granted type-status. Because the material of all five specimen sheets from the Sonder herbarium is very similar in appearance it is not possible to readily determine if MEL 568235 derives from Fiji or the New Hebrides. It could represent additional isolectotype material.

MEL 531063 has been chosen as the lectotype sheet because the specimen, although not large, was found mounted in such a way as to clearly display all the essential features mentioned in Sonder's description. The isolectotype (MEL 531064) mainly consists of erect fronds, with few, rather obscured, basal parts.

Sonder's manuscript, located in the Archives of the Royal Society of Tasmania (housed in the University of Tasmania Library), clearly shows that the name he suggested, "*Caulerpa vitiensis* Sond." was altered by Mueller to "*Caulerpa novo-ebudarium* Sond. & Muell." (fig. 1). Weber-van Bosse (1898) later adopted Sonder's

C. cryptacanthum Kütz. Tab. phycol.,
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Novo-Ebudarium

17, *Caulerpa vitiensis* Sond. spec. nov.
& Muell.

C. foetidus e surculo repente tenui,
tri-axulo, glabro, erectis, filiformibus,
dichotomis, basi compressis et margine
denticulatis, mox spirae modo inortibus
3-4-fariam denticatis, denticulis conicis
micronulatis.

Species *C. serrulatae* et *Freycinckii*
affinis, tenuitate ab omnibus distincta.
Frondes 3-4 pollicares, uti surculus
1/3 lin. latae. Rami erecti.

18, *Caulerpa Freycinckii* Ag. Rec. Alg. p. 446.
Kütz. Tab. phyc. Vol. VIII. A 4. c.

Fig. 1. Part of Sonder's manuscript, with Mueller's alteration of the specific epithet and author citation. (Courtesy of the Royal Society of Tasmania).

original manuscript epithet "*vitiensis*" from a specimen in the British Museum and, apparently unaware of Sonder's 1881 publication, described the taxon under *Caulerpa urvilleana* Montagne var. *vitiensis* Weber-van Bosse (1898: 319, p1. 26, fig. 12 a & b). She listed as synonyms the two manuscript names "*C. vitiensis* Sonder, herb. du mus. Brit." and "*C. cupressoides* var *tenuis* Grunow, herb. Godefroy, Ham-bourg.", and mentioned two collections, "Viti-Archipel (Graeffe! herb. Godefr. herb. du mus. Brit.), les Nouv.-Hebrides (herb. de Melbourne!)". These two collec-tions are therefore syntypes of *C. urvilleana* var. *vitiensis*.

Unfortunately the staff of the Department of Botany, British Museum (Natural History) have been unable to locate any specimen annotated "*Caulerpa vitiensis*" which might have been seen by Weber-van Bosse, and no specimen so annotated was recorded during a survey of the tropical *Caulerpa* collections in the Rijksherbarium, Leiden (I. R. Price, pers. comm.). Further investigation is needed to trace this specimen and compare it with MEL 531062 from "Viti Archipelagus, Pacific Ocean" in order to establish if the latter is, as seems likely, part of the same collection. Graeffe collected in Fiji in 1862 for the Godeffroy Museum in Hamburg, where Sonder no doubt examined and annotated the specimen apparently later seen at the British Museum by Weber-van Bosse.

Weber-van Bosse cited the New Hebrides collection as from the Melbourne her-barium and as seen (!) by herself. Her discussion following the description is remarkable in that she emphasized the lack of any stolon, a characteristic feature of the genus *Caulerpa*. Her fig. 12a shows a plant with an erect frond rising directly from rhizoids, without any stolon. However, all the specimens of the taxon in MEL show at least a short section of surculus. This would suggest that Weber-van Bosse never actually saw the Melbourne specimens, but was perhaps sent only a fragment without any basal parts. The Melbourne material she cited has not yet been traced.

***Caulerpa campbelliana* Sonder (1881:14).**

Lectotype (here chosen): MEL 531060. Isolectotypes: MEL 531050, 531061.

Much of the type collection is poor and consists only of fragments of upper parts of erect fronds. MEL 531060 contains the most complete and best-preserved specimen and is therefore chosen as lectotype. It is the only specimen which shows the proliferations at the tips of the fronds mentioned in Sonder's description and adequately shows all the other features described. The lectotype specimen is accom-panied by Sonder's draft diagnosis.

***Chaetomorpha novo-ebudica* Sonder (1881:14).**

Chaetomorpha australis Sonder in herb.

Lectotype (here chosen): MEL 531058. Isolectotype: MEL 531059.

Here, again, the specific epithet proposed by Sonder was altered by Mueller, before he submitted the manuscript to the Royal Society of Tasmania.

The type collection consisted of one specimen sheet annotated by Sonder and here selected as lectotype, together with a quantity of loose material and two loose labels also annotated by Sonder. The loose material becomes isolectotype and is now mounted with the two labels on MEL 531059. The lectotype is accompanied by Sonder's draft diagnosis, with a pencil drawing of a magnified portion of a frond.

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